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II

APPLICATION OF LANDSAT IMAGERY IN LAND USE INVENTORY
AND CLASSIFICATION IN NEBRASKA

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Type II Report for Period March 10, 1976 to June 10, 1976

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16. Abstract About 25 percent of the area covered by color infrared aerial photography has been interpreted at Level II. Initial investigations of computer compatible tape data have been conducted comparing tape signatures to Level II interpretations. The Digital Image Rectification System software package is being placed on line for use in data comparison.			
17. Key Words (Selected by Author(s)) Land use classification		18. Distribution Statement	
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PREFACE

This report covers the contract period March 10, 1976 to June 10, 1976 for the investigation evaluating the application of LANDSAT imagery in land use inventory and classification in Nebraska (Marvin P. Carlson, Principal Investigator, NAS5-20814).

During this reporting period LANDSAT data of usable quality has been received. GSFC software package "Digital image rectification system" (DIRS) has also been received and is currently being placed on line.

Additional field trips were completed to collect additional ground truth to attempt to resolve interpretation problems. Interpretation is approximately 25 percent complete for the areas for which aerial photography has been received.

MAIN TEXT

A. Problems The late September coverage continues to cause difficulties in interpretation. Ground truth provided additional information regarding interpretation relationships, but the difficulty was not resolved. A ten percent decrease in accuracy appears to be the average loss due to the late timing of the flight.

The DIRS software package is complex and will require some time to bring on line. It does appear to contain the necessary programming to evaluate the use of tape data for land use classification.

- B. Accomplishments Level II land use classification is well under way in both areas of coverage. Additional ground truth was collected for attempting to resolve some of the interpretation problems. Currently about 25 percent of the area covered by aerial photography has been interpreted.

Initial investigations of computer compatible tape data have been conducted utilizing recognizable ground features for location purposes. Comparisons are being made of tape signatures in relation to Level II interpretations on a 40 acre cell basis. This grid pattern is being developed to meet anticipated requirements for Public Law 92-500. Visual interpretation utilizing individual band and color composite photographic products has been tested for the 40 acre cell grid. Reasonably high levels of accuracy were achieved.

- C. Significant Results No significant results were obtained during this reporting period.
- D. Publications No publications resulted from this project during this reporting period.
- E. Recommendations No recommendations are suggested at this time.
- F. Funds Expended During this reporting period \$7,176 were expended for salaries, \$862 were expended for support and \$5,261 were applied against indirect costs.
- G. Data Use as of May 28, 1976 account status was:

<u>Account</u>	<u>Budget</u>	<u>Spent</u>	<u>Balance</u>
LANDSAT	\$11,300.	\$5,760.	\$5,540.
CCT	4,000.	-----	4,000.
Aircraft	3,744.	3,666.	78.

H. Aircraft Data No additional aircraft data was received during this reporting period.